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(54) Title: XENOTRANSPLANT FOR CNS THERAPY

(57) Abstract: A "supplementary choroid plexus" comprising preferably a xenotransplant of choroid plexus cells form a neonatal mammal provides a steady supply of trophic factors for administration to a central nervous system in need of treatment for a neurological disease. Choroid plexus cells manufacture a range of trophic factors, particularly during fetal development. This neurotrophic factor therapy may be useful in treating clinical and subclinical neurodegenerative diseases particularly those in which the choroid plexus has often become atrophic. The xenotransplant is cloaked in a protective layer (such as of alginate) capable of concealing the foreign nature of the transplant. Lateral ventricles are the preferred implantation site, from where the trophic factors are carried through the neuropil by the circulation of cerebrospinal fluid.

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61K35/30 A61L A61L27/38 A61P25/00 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61K C12N A61L Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) BIOSIS, EPO-Internal, WPI Data, PAJ C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. χ US 5 869 463 A (TORNATORE CARLO S ET AL) 1,2,6,7, 12-14 9 February 1999 (1999-02-09) Y the whole document, especially column 5 3-5.8-11lines 23-55 and column 8 lines 27-42 US 5 871 767 A (AEBISCHER PATRICK ET AL) Y 3-5.8-1116 February 1999 (1999-02-16) the whole document US 5 389 535 A (WAHLBERG LARS Α ET AL) 1-14 14 February 1995 (1995-02-14) cited in the application the whole document X Further documents are listed in the continuation of box C. Patent family members are listed in annex. Special categories of cited documents: *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the last which is not considered to be of particular relevance earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another. involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention citation or other special reason (as specified) cannot be considered to involve an inventive step when the document is combined with one or more other such docu-'O' document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled other means document published prior to the international filling date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 21 November 2000 28/11/2000 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Stein, A Fax: (+31-70) 340-3016

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Intern Inal Application No
PCT/NZ 00/00064

· IC Antinu	Wind DOGUMENTS CONCIDENTS TO BE SEE SWAFF	PC1/NZ 00/00064
Category °	etion) DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 550 050 A (LYSAGHT MICHAEL J ET AL) 27 August 1996 (1996-08-27) cited in the application column 8, line 29 -column 12, line 26	1-14
A	KITADA MASAAKI ET AL: "Axonal regeneration in the central nervous system is enhanced by ependymal cell transplants." NEUROSCIENCE RESEARCH SUPPLEMENT, no. 22, 1998, page S318 XP000960785 21st Annual Meeting of the Japan Neuroscience Society and the First Joint Meeting of the Japan Neuroscience Society and the Japanese Society for Neurochemistry; Tokyo, Japan; September 21-23, 1998 ISSN: 0921-8696 the whole document	1-14
		Α
		•

1

Information on patent family members

Intern. Inal Application No
PCT/NZ 00/00064

	tent document in search report		Publication date		Patent family member(s)	Publication date	
US	5869463	A	09-02-1999	· AU	690548 B	30-04-19	998
		• •		AU	6531294 A	08-11-19	
				CA	2159738 A	27-10-1	
				EP	0696205 A	14-02-19	996
				JP	8509215 T	01-10-1	996
				WO	9423754 A	27-10-1	994
				US	5690927 A	25-11-1	997
				US	5753491 A	19-05-1	998
US	5871767	A	16-02-1999	US	5800828 A	01-09-1	998
				US	5834001 A	10-11-1	
				US	5800829 A	01-09-1	998
				US	5798113 A	25-08-1	998
				US	5869077 A	09-02-1	999
				US-	5874099 A	23-02-1	999
				AT	156344 T	15-08-1	
		,	•	AU	666118 B	01-02-1	996
				AU	2004192 A	21-12-1	
			• •	AU,	682796 B	16-10-1	
				AU	3902095 A	01-02-1	
				DE	69221484 D	11-09-1	
				DE	69221484 T	19-02-1	
				DK	585368 T	16-03-1	998
				EP	0585368 A	09-03-1	994
		·		ES	2107537 T	01-12-1	997
				FI	934545 A	01-12-1	993
				GR	3025301 T	27-02-1	998
				HK	1001832 A		998
•		,	. *	JP	6507412 T	25-08-1	994
				NO	933842 A	25-10-1	993
				SG	47470 A		998
			* 4	WO	9219195 A	12-11-1	992
•				US	6083523 A		
				US	5955095. A	21-09-1	999
US						The second of th	
	5389535	Α	14-02-1995	US	5284761 A		
	5389535	Α	14-02-1995	US	5284761 A 5158881 A	27-10-1	992
	5389535	Α	14-02-1995			27-10-1 09-01-1	992 990
	5389535	A	14-02-1995	US	5158881 A	27-10-1 09-01-1 15-01-1	992 990 996
	5389535	А	14-02-1995	US US AT CA	5158881 A 4892538 A 131728 T 2049056 A	27-10-1 09-01-1 15-01-1 09-07-1	992 990 996 991
	5389535	A	14-02-1995	US US AT CA DE	5158881 A 4892538 A 131728 T 2049056 A 69115571 D	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1	992 990 996 991 996
	5389535	А	14-02-1995	US US AT CA DE DE	5158881 A 4892538 A 131728 T 2049056 A 69115571 D 69115571 T	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1	992 990 996 991 996 996
	5389535	A	14-02-1995	US AT CA DE DE DK	5158881 A 4892538 A 131728 T 2049056 A 69115571 D 69115571 T 462269 T	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1	992 990 996 991 996 996
	5389535	A	14-02-1995	US AT CA DE DE DK EP	5158881 A 4892538 A 131728 T 2049056 A 69115571 D 69115571 T 462269 T 0462269 A	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1	992 990 996 991 996 996 996
	5389535	A	14-02-1995	US AT CA DE DE DK EP ES	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 69115571 T 462269 T 0462269 A 2080939 T	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1	992 990 996 991 996 996 996 991
	5389535	A	14-02-1995	US AT CA DE DE DK EP ES FI	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2	992 990 996 991 996 996 996 991 996
	5389535	A	14-02-1995	US US AT CA DE DK EP ES FI GR	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2	992 990 996 991 996 996 996 991 996
	5389535	A	14-02-1995	US US AT CA DE DK EP ES FI GR HK	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1	992 990 996 991 996 996 996 991 996 000 996
	5389535	A	14-02-1995	US US AT CA DE DK EP ES FI GR HK JP	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2	992 990 996 991 996 996 996 991 996 000 996
	5389535	A	14-02-1995	US US AT CA DE DE DK EP ES FI GR HK JP JP	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2	992 990 996 991 996 996 991 996 000 996 996
	5389535	A	14-02-1995	US US AT CA DE DE DK EP ES FI GR HK JP KR	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T 162498 B	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2 24-12-1	992 990 996 991 996 996 996 996 000 996 996 2000 992 998
	5389535	A	14-02-1995	US AT CA DE DE EP GR HK JP KR NO	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T 162498 B 302128 B	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2 24-12-1 16-11-1 26-01-1	992 990 996 991 996 996 996 996 000 996 000 996 000 992 998
	5389535	A	14-02-1995	US US AT CA DE DE DE FI GR HK JP KR NO WO	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T 162498 B	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2 24-12-1 16-11-1 25-07-1	992 990 996 991 996 996 996 991 996 000 996 000 992 998 998
	5389535	A	14-02-1995	US US AT CA DE DE DE FI GR HK JP KR NO US	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T 162498 B 302128 B 9110425 A	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2 24-12-1 16-11-1 25-07-1 28-07-1	992 990 996 996 996 996 996 996 000 996 000 992 998 998 998
	5389535	A	14-02-1995	US US AT CA DE DE DE ES FI GR HK JP KNO US US	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T 162498 B 302128 B 9110425 A 5786216 A	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2 24-12-1 16-11-1 26-01-1 28-07-1 01-07-1	992 990 996 996 996 996 996 996 000 996 000 992 998 998 998 991
	5389535	A	14-02-1995	US US AT CA DE DE DE ES FI HK JP KNO US US US	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T 162498 B 302128 B 9110425 A	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2 24-12-1 16-11-1 25-07-1 28-07-1 01-07-1	992 990 996 996 996 996 996 996 000 996 000 992 998 998 991 1998
	5389535	A	14-02-1995	US US AT CA DE DE DE ES FI GR HK JP KNO US US	5158881 A 4892538 A 131728 T 2049056 A 69115571 T 462269 T 0462269 A 2080939 T 104699 B 3018582 T 58896 A 3007144 B 4507423 T 162498 B 302128 B 9110425 A 5786216 A	27-10-1 09-01-1 15-01-1 09-07-1 01-02-1 09-05-1 22-01-1 27-12-1 16-02-1 31-03-2 31-03-1 12-04-1 07-02-2 24-12-1 16-11-1 25-07-1 28-07-1 01-07-1	992 990 996 996 996 996 996 996 996 996 996

Information on patent family members

Intern. nal Application No PCT/NZ 00/00064

Patent document cited in search report	Publication date		Patent tamily member(s)	Publication date
US 5389535 A		AT	86103 T	15-03-1993
		AU	2718488 A	14-06-1989
		AU	621326 B	12-03-1992
		CA	1335715 A	30-05-1995
		DE	3878918 A	08-04-1993
		DE	3878918 D	08-04-1993
		DE	3878918 T	17-06-1993
		DK	121690 A	13-07-1990
		EΡ	0388428 A	26-09-1990
		FI	95284 B	29-09-1995
		HK	1002406 A	21-08-1998
		JP	2780796 B	30-07-1998
		JP	3502534 T	13-06-1991
		KR	139223 B	15-05-1998
		NO	180031 B	28-10-1996
		US	RE35653 E	04-11-1997
		WO	8904655 A	01-06-1989
		US	5554148 A	10-09-1996
		US	5487739 A	30-01-1996
		US	5573528 A	12-11-1996
		US	5106627 A	21-04-1992
		US	5182111 A	26-01-1993
		US	5156844 A	20-10-1992
		US	5871472 A	16-02-1999
US 5550050 A	27-08-1996	.AU	697600 B	08-10-1998
		AU	2382995 A	10-11-1995
		BR	9507391 A	16-09-1997
		CA	2187335 A	26-10-1995
	•	CN	1146155 A	26-03-1997
	• .	CZ	9603004 A	12-03-1997
		EP	0756487 A	05-02-1997
		FI	964124 A	14-10-1996
		HŪ	75661 A	28-05-1997
		JP.	10501792 T	17-02-1998
		ĽV	11730 A	20-04-1997
		ĽΫ	11730 R	20-02-1998
		NO	964358 A	13-12-1996
		PL	316845 A	17-02-1997
•				
•		SK	131696 A	04-06-1997
		WO	9528166 A	26-10-1995
		ZA	9503126 A	04-01-1996